



Copthorne CE Junior School

“Creating confident, curious learners with God’s love”



Curriculum Intent

At Copthorne CE Junior School, we prepare our children for lifelong learning by delivering an **ambitious, engaging, vibrant and inclusive** curriculum. Through ensuring a **progression of knowledge and skills** for all learners, our children will become **subject experts** within a **challenging, broad and balanced** curriculum.

Our children are encouraged to gain new knowledge, explore new skills, **develop resilience, make connections** and so **become critical thinkers**, who are **creative, curious and confident**.

Our Christian values are woven into all aspects of school life and the learning that takes place. Children become **collaborative, respectful and compassionate** members of our **diverse** community.

We believe that when leaving the school, our children will have the tools to be **active, independent learners**, who **take risks**, are **inquisitive** and have a **thirst for learning**. This allows them to flourish as they continue on their educational journey.

Design and Technology Intent

Our Design and Technology curriculum is based around the following:

Our children will...

- Experience the full process of Design and Technology whilst being given the opportunity to apply their creativity through designing and making
- Work individually and collaboratively to develop the creative, technical and practical knowledge needed to create a range of products
- Build and apply a range of knowledge, understanding and skills in order to design and make purposeful products
- Evaluate products and the work of others
- Experience the creativity that cooking brings and learn how to cook a variety of dishes

DESIGN & TECHNOLOGY CURRICULUM OVERVIEW

	Autumn	Spring	Summer
Year 3	The Copthorne Detectives Woodwork – Picture Frames Food technology – Gingerbread	Rock ‘n’ Roll Romans Textiles – Hand Puppets Food technology – Individual Pizzas	Walk like an Egyptian Technology with Engineering – STEM Lego Spike Essential: Amazing Amusement Park Cooking and Nutrition – Egyptian Flatbread
Year 4	Upstairs, downstairs Woodwork – Creating a box with hinges Food technology – Victorian Sponge	Explorers, Raiders and Traders Technology with Computer Science – STEM Lego Spike Essential: Happy Traveller Cooking and Nutrition – Viking Porridge	Mysterious Mayans Mixed Media Project – Papier-mâché Mayan Masks (links with Art & Design curriculum) Food technology – Mayan Guacamole
Year 5	Henry VIII – Hero or Villain? Textiles – Money pouches Food technology – Cheese and Onion Quiche	Who Let the Gods Out? Construction – Greek Sandals Food technology – Greek Salad	Journey into the Unknown Technology with Computer Science – STEM Lego Spike Essential: Crazy Carnival Games Cooking and Nutrition – Sushi
Year 6	We’ll meet again Woodwork - Anderson Shelter (with an internal frame) Food technology – VE Day Rations (Bubble and Squeak)	Exploring the Extreme Technology with Engineering – STEM Lego Spike Essential: Quirky Creations Cooking and Nutrition – Soup	Back to the Future Mixed Media – Stone Age Jewellery Food technology – Celebration cupcakes

Food Technology – Cooking opportunity experience

Cooking and Nutrition – Full planning unit following steps from the National Curriculum

DESIGN & TECHNOLOGY Curriculum Progression

By the end of Key Stage 2, pupils should be able to effectively:

Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.

Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.

Critique, evaluate and test their ideas and products and the work of others.

Understand and apply the principles of nutrition and learn how to cook.

Foci	Year 2 end points	Year 3 end points	Year 4 end points	Year 5 end points	Year 6 end points
Design	- Design purposeful, functional, appealing products for themselves and other users based on design criteria - Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	- Adapt an initial design to develop more than one design - Record the design using annotated sketches - Think about the order of their work and decide upon tools and materials/ingredients - Propose suggestions as to how they can achieve their design ideas. - Consider qualities of materials/ingredients chosen	- Develop more than one design - Design and use prototypes to develop and share ideas - Plan a sequence of actions to make a product - Think ahead about the order of their work and decide upon tools and materials/ingredients. - Propose realistic suggestions as to how they can achieve their design ideas. - Consider aesthetic qualities of materials/ingredients chosen.	- List tools needed before starting an activity. - Plan the sequence of work e.g. using a storyboard. - Record ideas using annotated diagrams. - Sketch and model alternative ideas. - Decide which design idea to develop.	- Consider and evaluate tools needed before starting an activity. - Plan the sequence of work e.g. using a storyboard. - Devise step-by-step plans, which can be read / followed by someone else. - Combine modelling and drawing to refine ideas; record ideas using annotated diagrams. - Evaluate design ideas and decide which design idea to develop.

Make	- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] - Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	- Prepare templates for their design - Select from a range of tools for cutting shaping joining and finishing - Select from techniques for different parts of the process - Select from materials according to their functional properties - Plan the stages of the making process - Use appropriate finishing techniques	- Prepare templates for their design and make group/class prototypes - Carefully select from a range of tools for cutting shaping joining and finishing and use tools with accuracy - Carefully select from materials according to their functional properties - Plan the stages of the making process - Carefully consider and use appropriate finishing techniques	- Make prototypes - Develop one idea in depth - Use research to inform the making process - Produce detailed lists of ingredients / components / materials and tools. - Select from and use a wide range of materials and tools. - Cut accurately and safely to a marked line. - Use appropriate finishing techniques for the project - Refine their product – review and rework/improve.	- Make and evaluate effective prototypes - Develop and evaluate one idea in depth - Use research to inform and evaluate the making process - Carefully consider and produce detailed lists of ingredients / components / materials and tools. - Carefully consider and select from and use a wide range of materials and tools. - Cut accurately and safely to a marked line. - Evaluate and use appropriate finishing techniques for the project - Refine their product – review and rework/improve.
Evaluate	- Explore and evaluate a range of existing products - Evaluate their ideas and products against design criteria	- Investigate similar products to the one to be made to give starting points for a design - Draw/sketch products to help analyse and understand how products are made - Research needs of user/ purpose of the product - Identify the strengths and weaknesses of their design ideas and decide which design idea to develop - Consider and explain how the finished product could be improved	- Investigate similar products to the one to be made to give starting points for a design - Draw/sketch products to help analyse and understand how products are made – annotate these sketches - Research needs of user/ purpose of the product - Identify the strengths and weaknesses of their design ideas and decide and explain which design idea to develop - Consider and explain how the finished product could be improved and reflect upon the process	- Research and evaluate existing products - Consider user and purpose - Identify the strengths and weaknesses of their design ideas in relation to purpose/user - Give a report using technical vocabulary - Consider and explain how the finished product could be improved in relation to the design criteria - Consider how well the finished product meets the design criteria of the user	- Research and evaluate existing products - Carefully consider user and purpose - Identify and explain the strengths and weaknesses of their design ideas in relation to purpose/user - Accurately, give a report using correct technical vocabulary - Consider and explain how the finished product could be improved in relation to the design criteria and reflect upon the process - Consider and explain how well the finished product meets the design criteria of the user

		Discuss how well the finished product meets the design criteria	Discuss how well the finished product meets the design criteria of the user		
<u>Vocabulary</u>		User, purpose, design, model, evaluate, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, appealing	Evaluating, design, brief design criteria, innovative, prototype, user, purpose, function, design criteria, innovative, appealing, design brief, planning, annotated sketch, evaluate	Design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype	Function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype
Technological Knowledge: Food and Nutrition	- Use the basic principles of a healthy and varied diet to prepare dishes - Understand where food comes from	- Use equipment safely - Be hygienic - Make product look attractive - Prepare and cook some dishes safely and hygienically - Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking - Understand the principles of a healthy and varied diet	- Use equipment safely - Be hygienic - Think about presenting product in interesting/ attractive ways - Understand ingredients can be fresh, pre-cooked or processed - Prepare and cook some dishes safely and hygienically - Grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking - Understand and apply the principles of a healthy and varied diet	- Explain how to be safe / hygienic and follow own guidelines - Present product well - interesting, attractive, fit for purpose - Describe how recipes can be adapted to change appearance, taste, texture, aroma - Prepare and cook some savoury and sweet dishes safely and hygienically including, where appropriate, use of heat source - Use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking - Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed	- Understand a recipe can be adapted by adding / substituting ingredients - Explain seasonality of foods - Adapt recipes to change appearance, taste, texture or aroma. - Prepare and cook a variety of savoury and sweet dishes safely and hygienically including, where appropriate, the use of heat source. - Confidently use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking - Understand and explain seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

<u>Vocabulary</u>		Start to use key vocabulary to demonstrate knowledge and understanding in this strand: name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, caught, reared, frozen, tinned, processed, seasonal, harvested healthy/varied diet	Start to use key vocabulary to demonstrate knowledge and understanding in this strand: name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, caught, reared, frozen, tinned, processed, seasonal, harvested healthy/varied diet	Appropriately select key vocabulary to demonstrate knowledge and understanding in this strand: name of products, names of equipment, utensils, techniques and ingredients spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble	Confidently select key vocabulary to demonstrate knowledge and understanding in this strand: name of products, names of equipment, utensils, techniques and ingredients spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble
Technological Knowledge: Textiles	- Choose suitable textiles - Measure, cut and join textiles to make a product - Carefully cut textiles to produce accurate pieces - Explain choices of textile	- Select appropriate materials, giving reasons - Use a variety of techniques, e.g. printing, dyeing, weaving and stitching to create different textural effects - Develop skills in stitching, cutting and joining	- Select appropriate materials and evaluate their choices - Select a variety of techniques to create different textural effects	- Further develop skills in stitching, cutting and joining - Experiment with a range of media by overlapping and layering in order to create texture, effect and colour	- Combine previously learned techniques to create pieces - Show precision in techniques
<u>Vocabulary</u>		Start to use key vocabulary to demonstrate knowledge and understanding in this strand: pattern, line, texture, colour, shape, turn, thread, needle, textiles, decoration.	Start to use key vocabulary to demonstrate knowledge and understanding in this strand: pattern, line, texture, colour, shape, turn, thread, needle, textiles, decoration.	Appropriately select key vocabulary to demonstrate knowledge and understanding in this strand: pattern, line, texture, colour, shape, turn, thread, needle, textiles, decoration.	Confidently select key vocabulary to demonstrate knowledge and understanding in this strand: pattern, line, texture, colour, shape, turn, thread, needle, textiles, decoration.

Technological Knowledge: Structures; including Woodwork, Construction and Models	Build structures, exploring how they can be made stronger, stiffer and more stable	- Develop vocabulary related to the project - Use appropriate tools and materials - Create frame structures - Join materials using appropriate methods to create a frame - Strengthen frames using reinforcing triangles	- Develop and use vocabulary related to the project - Select and use appropriate tools and materials - Create shell and frame structures - Join materials using appropriate methods to create a box - Strengthen shell and frames using reinforcing triangles - Understand how the shape of a structure affects its stability	- Develop the correct terminology for tools, materials and processes - Select and use appropriate tools and materials - Explain how the shape of a structure affects its stability - Join materials using appropriate methods - Know that the weight of the structure needs to be evenly spread on the base to make it secure	- Use the correct terminology for tools, materials and processes - Use and evaluate appropriate tools and materials - Create and evaluate shell and frame structures - Join materials with increasing confidence - Use different methods to strengthen or reinforce their designs - Strengthen frames with diagonal struts - Make structures more stable by giving them a wide base
<u>Vocabulary</u>		Start to use key vocabulary to demonstrate knowledge and understanding in this strand: cut, fold, join, fix structure, weak, strong, side, edge, corner, straight, wood, triangle, square, rectangle.	Start to use key vocabulary to demonstrate knowledge and understanding in this strand: cut fold, join, weak, strong, base, lid, top, sides, front, back, underneath, side, surface, corner, straight, curved, wood, triangle, square, rectangle, cuboid, cube, shell structure, frame structure, three-dimensional (3-D) shape, net, cube, cuboid, length, width, breadth, marking out, joining, material, stiff, strong, decision.	Appropriately select key vocabulary to demonstrate knowledge and understanding in this strand: cut, fold, join, weak, strong, base, top, sides, surface, straight, curved, three-dimensional (3-D) joining, material, stiff, strong, decision.	Confidently select key vocabulary to demonstrate knowledge and understanding in this strand: cut, fold, join, weak, strong, base, top, underneath, side, surface, wood, triangle, square, rectangle, cuboid, cube, shell structure, three-dimensional (3-D) shape, net, length, width, breadth, marking out, joining, assemble, corrugating, accuracy, material, stiff, strong, decision, frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent.
Technological Knowledge: Mechanical; including Technology with Engineering	Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products	- Select appropriate tools/ techniques - Begin to try new/different ideas - Use simple lever and linkages to create movement	- Select most appropriate tools/ techniques - Explain alterations to product after checking it - Grow in confidence about trying new / different ideas - Use levers and linkages to create movement	- Select most appropriate tools/ techniques - Grow in confidence about trying new / different ideas - Begin to use cams, pulleys or gears to create movement	- Select and evaluate most appropriate tools/ techniques - Be confident to try new / different ideas - Use cams, pulleys and gears to create movement

Vocabulary

Start to use key vocabulary to demonstrate knowledge and understanding in this strand:

USB cable, wire, switch, code, control, program, system, input, output, algorithm, bug, command, control, debug/debugging, event, object, repeat, selection, timer, variables

Start to use key vocabulary to demonstrate knowledge and understanding in this strand:

USB cable, wire, switch, code, control, program, system, input, output, algorithm, bug, command, control, debug/debugging, event, object, repeat, selection, timer, variables

Appropriately select key vocabulary to demonstrate knowledge and understanding in this strand:

USB cable, wire, switch, code, control, program, system, input, output, algorithm, bug, command, control, debug/debugging, event, object, repeat, selection, timer, variables

Confidently select key vocabulary to demonstrate knowledge and understanding in this strand:

USB cable, wire, switch, code, control, program, system, input, output, algorithm, bug, command, control, debug/debugging, event, object, repeat, selection, timer, variables